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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/512,061	10/21/2004	Haitao Tang	47092.00101	8579

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EXAMINER	
BRANDT, CHRISTOPHER M	

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
04/01/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/512,061	TANG ET AL.	
	Examiner	Art Unit	
	CHRISTOPHER M. BRANDT	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 January 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 October 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This Action is in response to applicant's amendment/arguments filed on January 8, 2009. **Claims 25-68** are still currently pending in the present application. **This Action is made FINAL.**

Response to Arguments

Applicant's arguments filed January 8, 2009 have been fully considered but they are not persuasive.

With regard to applicant's argument that Cidon, Yum, and Reinshmidt fail to disclose "wherein said network node is configured to generate, for each of its immediate offspring nodes, a respective updating information and to send said respective updating information to all of the immediate offspring nodes...the respective updating information...differs for each of the immediate offspring nodes based on the spanning tree structure," the examiner respectfully disagrees. Reinshmidt teaches that if the offset number and the current hop number of the modified packet differ, the node puts the next consecutive node's IP address, to which the packet should be forwarded, as the next intermediate end station, in front of the packet, and updates the current hop number (paragraph 79). The "offspring nodes" are read as the next consecutive node, which is also the immediate node. In addition, the updating of the current hop number is "updating information" so that the packet will arrive at its intended destination. Moreover, the updating information sent to each of the offspring nodes is different for each of the immediate offspring nodes since the packet is modified with the next consecutive node's IP address. The examiner also notes that Cidon teaches that the nodes execute a distributed tree maintenance

protocol in order to construct this tree and maintain topology changes (305.1.5 lines 37-42). In addition, Cidon is concerned with using this topology to find the minimum hop path (301.1.5 lines 1-13). Reinshmidt is also concerned with finding the minimum path (Reinshmidt teaches that the originator maintains data for the optimal path, paragraph 79). Therefore, the combination of Cidon, Yum, and Reinshmidt teach "wherein said network node is configured to generate, for each of its immediate offspring nodes, a respective updating information and to send said respective updating information to all of the immediate offspring nodes...the respective updating information...differs for each of the immediate offspring nodes based on the spanning tree structure."

As a result, the claims are written such that the claims read upon the cited references.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 25, 28-40, 42-44, and 46-47 are rejected under 35 USC 103(a) as being anticipated by **Cidon et al. (Control Mechanisms for High Speed Networks, hereinafter Cidon)** in view of **Yum et al. (Multicast Source Routing in Packet-Switched Networks, hereinafter Yum)** and further in view of **Reinshmidt et al. (US PGPUB 2002/0150041 A1, hereinafter Reinshmidt)**.

Consider **claim 25 (and similarly applied to claims 49 and 50)**. Cidon discloses a method comprising:

detecting a network parameter change in a network node of said network (305.1.5 lines 37-42, read as the nodes execute a distributed tree maintenance protocol in order to construct this tree and maintain topology changes);

determining based on topology information of a radio access network, a spanning tree of routing paths corresponding to shortest paths from the network node to other nodes (301.1.5 lines 1-13, read as in the topology data base, it is possible to estimate the expected packet loss which is the primary parameter in determining acceptability of a link. Among the subset of acceptable links, a minimum hop path is chosen); and

distributing network parameter information indicating said network parameter change from said network node to said other nodes in accordance with said spanning tree (301.1.5 lines 42-46, read as when a node wishes to broadcast a topology update message, it gives it the right header and transmits it all its neighbors on the topology spanning tree),

wherein said network node is configured to update, for each of its offspring nodes, a respective updating information and to send said respective updating information to all offspring nodes (301.1.5 lines 48-50, read as every node will receive every message once, over one of its tree links. Therefore, the updating information was generated in order for the node to send the message).

Although, Cidon disclosed the claimed invention, he failed to explicitly state the generation of updating information.

However, Yum discloses generation of updating information (page 1284 column 2 lines 13-27, read as all routing information is assembled at the source node and put into the packet header).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Yum into the invention of Cidon in order to progress the packet toward it destination (page 1284, column 2 lines 13-27).

In addition, Cidon and Yum fail to explicitly teach wherein the respective updating information sent to the immediate offspring nodes differs for each of the immediate offspring nodes based on the spanning tree structure.

However, Reinshmidt teaches wherein the respective updating information sent to the immediate offspring nodes differs for each of the immediate offspring nodes based on the

spanning tree structure (paragraph 79, read as if the offset number and the current hop number of the modified packet differ, the node puts the next consecutive (intermediate) node's IP address, to which the packet should be forwarded, as the next intermediate end station, in front of the packet, and updates the current hop number).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Reinshmidt into the invention of Cidon and Yum so that the next consecutive nodes, along the selected path, will be able to recognize whether the packet is to be forwarded to the next intermediate node, or it has arrived to the destination node (paragraph 79).

Consider **claim 42 (and similarly applied to claim 51)**. Cidon discloses an apparatus, comprising:

a detector configured to detect a change in a network parameter related to said apparatus; a distributor configured to distribute a network parameter information to network nodes of a transmission network (305.1.5 lines 37-42, 301.1.5 lines 42-46, read as the nodes execute a distributed tree maintenance protocol in order to construct this tree and maintain topology changes); wherein the distributor distributes said network parameter information indicating said network parameter change towards said network nodes in response to said detection and in accordance with a spanning tree of routing paths corresponding to shortest paths from said apparatus to said nodes (301.1.5 lines 1-13, read as in the topology data base, it is possible to estimate the expected packet loss which is the primary parameter in determining acceptability of a link. Among the subset of acceptable links, a minimum hop path is chosen. When a node wishes to broadcast a topology update message, it gives it the right header and transmits it all its

neighbors on the topology spanning tree), wherein said apparatus is configured to update for each of its offspring nodes a respective updating information; and a transmitter to send said respective updating information to all offspring nodes (301.1.5 lines 48-50, read as every node will receive every message once, over one of its tree links, and will forward it to the other tree links. Therefore, the updating information was generated in order for the nodes to send and receive the message).

Although, Cidon disclosed the claimed invention, he failed to explicitly state a generator configured to generate updating information.

However, Yum discloses a generator configured to generate updating information (page 1284 column 2 lines 13-27, read as all routing information is assembled at the source node and put into the packet header).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Yum into the invention of Cidon in order to progress the packet toward it destination (page 1284, column 2 lines 13-27).
In addition, Cidon and Yum fail to explicitly teach wherein the respective updating information sent to the immediate offspring nodes differs for each of the immediate offspring nodes based on the spanning tree structure.

In addition, Cidon and Yum fail to explicitly teach wherein the respective updating information sent to the immediate offspring nodes differs for each of the immediate offspring nodes based on the spanning tree structure.

However, Reinshmidt teaches wherein the respective updating information sent to the immediate offspring nodes differs for each of the immediate offspring nodes based on the

spanning tree structure (paragraph 79, read as if the offset number and the current hop number of the modified packet differ, the node puts the next consecutive (intermediate) node's IP address, to which the packet should be forwarded, as the next intermediate end station, in front of the packet, and updates the current hop number).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Reinshmidt into the invention of Cidon and Yum so that the next consecutive nodes, along the selected path, will be able to recognize whether the packet is to be forwarded to the next intermediate node, or it has arrived to the destination node (paragraph 79).

Consider **claim 46 (and similarly applied to claim 52)**. Cidon discloses an apparatus, comprising:

a distributor configured to distribute a network parameter information to network nodes of a radio access network; a receiver configured to receive a network parameter information from an upper node, to update a stored parameter information according to said received network parameter information, and wherein the distributor distributes said network parameter information to its offspring network nodes based on a updating information included in said network parameter information, said update information being derived from a spanning tree routing topology; and an updater configured to update said update information in said network parameter information before distributing said network parameter information to said other nodes (301.1.5 lines 37-50, read as the node executes a distributed tree maintenance protocol in order to construct this tree and maintain it despite topology changes in the network. When a node wishes to broadcast a topology update message, it gives it the right header and transmits it

all its neighbors on the topology spanning tree. If a broadcast packet arrives over a tree link, it is forwarded over the other tree links. Every node will receive every message once, over one of its tree links, and will forward it to the other tree links).

Cidon discloses the claimed invention except he fails to disclose branching information (Cidon discloses updating information).

However, Yum discloses branching information (page 1285 column 2 lines 41-43, read as in Branch-by-Branch coding, the address tree is broken up into branches at the root node and the codes for each branch follows one another).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Yum into the invention of Cidon in order to multicast packets from a source node to a set of destination nodes via a set of intermediate nodes (page 1285 column 2 lines 30-39).

In addition, Cidon and Yum fail to explicitly teach wherein the respective updating information sent to the immediate offspring nodes differs for each of the immediate offspring nodes based on the spanning tree structure.

However, Reinshmidt teaches wherein the respective updating information sent to the immediate offspring nodes differs for each of the immediate offspring nodes based on the spanning tree structure (paragraph 79, read as if the offset number and the current hop number of the modified packet differ, the node puts the next consecutive (intermediate) node's IP address, to which the packet should be forwarded, as the next intermediate end station, in front of the packet, and updates the current hop number).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Reinshmidt into the invention of Cidon and Yum so that the next consecutive nodes, along the selected path, will be able to recognize whether the packet is to be forwarded to the next intermediate node, or it has arrived to the destination node (paragraph 79).

Consider **claim 28 and as applied to claim 25 (and similarly applied to claim 55)**. Cidon and Yum disclose wherein said network parameter information relates to a QoS-related parameter (301.1.1, column 1 lines 36-40).

Consider **claim 29 and as applied to claim 28 (and similarly applied to claim 56)**. Cidon and Yum disclose wherein said network parameter information comprises at least one of a link state, a link utilization, a node utilization, and a macro diversity combining load (301.1.5 column 1 lines 1-13).

Consider **claim 30 and as applied to claim 25 (and similarly applied to claim 57)**. Cidon and Yum further disclose of deriving said topology information from at least one routing table (301.1.3 column 2 lines 30-37).

Consider **claim 31 and as applied to claim 30 (and similarly applied to claim 58)**. Cidon and Yum disclose wherein one routing table is provided for each network node (301.1.3 column 2 lines 30-37).

Consider **claim 32 and as applied to claim 31 (and similarly applied to claim 59)**. Cidon and Yum disclose wherein said one routing table provides a branch information for each of the immediate offspring nodes of said network node (page 1285 line 30 – page 1286 line 10).

Consider **claim 33 and as applied to claim 32 (and similarly applied to claim 60)**. Cidon and Yum disclose wherein said branch information indicates branches of the concerned immediate offspring node (page 1285 line 30 – page 1286 line 10).

Consider **claim 34 and as applied to claim 25 (and similarly applied to claim 61)**. Cidon and Yum further disclose of deriving said topology information from a link state database of a routing protocol of said transmission network (301.1.3 column 2 lines 30-37).

Consider **claim 35 and as applied to claim 25 (and similarly applied to claim 62)**. Cidon and Yum further disclose of obtaining said topology information by running a flooding scheme and a shortest-path-first algorithm (301.1.5 column 1 lines 1-35).

Consider **claim 36 and as applied to claim 25 (and similarly applied to claim 63)**. Cidon and Yum further disclose of deciding on those parameters to be included in said network parameter information based on said topology information (301.1.3 column 2 lines 37-56).

Consider **claim 37 and as applied to claim 25 (and similarly applied to claim 64)**. Cidon and Yum disclose wherein said network parameter information comprises said updating information sent to each of the immediate offspring nodes (301.1.3 column 2 lines 37-56).

Consider **claim 38 and as applied to claim 37 (and similarly applied to claim 65)**. Cidon and Yum disclose wherein said updating information comprises a branch information, a parameter update information and a node identification of the network node at which said network parameter change has occurred (page 1285 line 30 – page 1286 line 10).

Consider **claim 39 and as applied to claim 37 (and similarly applied to claim 66)**. Cidon and Yum disclose further comprising distributing a received updating information from the immediate offspring nodes of said network node to an immediate offspring node of said immediate offspring nodes based on said branch information (page 1285 line 30 – page 1286 line 10).

Consider **claim 40 and as applied to claim 37 (and similarly applied to claim 67)**. Cidon and Yum disclose further comprising updating a parameter information stored at said immediate offspring nodes using said updating information (page 1285 line 30 – page 1286 line 10).

Consider **claim 43 and as applied to claim 42**. Cidon and Yum disclose wherein said spanning tree is derived from a topology information of said transmission network (301.1.3 column 2 lines 30-37).

Consider **claim 44 and as applied to claim 43**. Cidon and Yum disclose wherein said network is configured to decide on those parameters to be included in said network parameter information based on said topology information (301.1.3 column 2 lines 37-56).

Consider **claim 47 and as applied to claim 46**. Cidon and Yum disclose wherein said network nodes are immediate offspring nodes of said network node (page 1285 line 30 – page 1286 line 10).

Claims 26-27, 41, 45, 48, 53, 54, and 68 are rejected under 35 USC 103(a) as being anticipated by **Cidon et al. (Control Mechanisms for High Speed Networks, hereinafter Cidon)** in view of **Yum et al. (Multicast Source Routing in Packet-Switched Networks,**

hereinafter Yum) in view of **Reinshmidt et al. (US PGPUB 2002/0150041 A1, hereinafter Reinshmidt)** and further in view of **Neumiller et al. (WO 00/70782, hereinafter Neumiller)**.

Consider **claim 26 and as applied to claim 25 (and similarly applied to claim 53)**. Cidon, Yum, and Reinshmidt disclose the claimed invention except wherein said network parameter information is used in a network operation and management procedure in a radio access network.

However, Neumiller discloses wherein said network parameter information is used in a network operation and management procedure in a radio access network (page 1 line 13 – page 2 line 10, read as wireless communication systems).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Neumiller into the inventions of Cidon, Yum, and Reinshmidt in order to simultaneously handle a call by two different base stations if a remote unit moves within a particular area (page 1 lines 13-33).

Consider **claim 27 and as applied to claim 26 (and similarly applied to claim 54)**. Cidon, Yum, and Neumiller disclose wherein said network operation and management procedure is a macro diversity combining MDC point selection procedure (page 9 line 34 – page 10 line 28).

Consider **claim 41 and as applied to claim 25 (and similarly applied to claim 68)**. Cidon and Yum disclose the claimed invention except wherein said transmission network is a radio access network based on internet protocol technology.

However, Neumiller discloses wherein said transmission network is a radio access network based on internet protocol technology (page 6 lines 12-26, read as all frames transmitted to switch is done so via a packet protocol such as Internet Protocol (IP).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Neumiller into the inventions of Cidon, Yum, and Reinshmidt in order to allow for the delivery of significantly more content and functionality.

Consider **claims 45 and 48 and as applied to claims 42 and 46**. Cidon and Yum disclose wherein said network node is a base station device of a radio access network.

However, Neumiller discloses wherein said network node is a base station device of a radio access network (page 1 line 13 – page 2 line 10, read as wireless communication systems).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the teachings of Neumiller into the inventions of Cidon, Yum, and Reinshmidt in order to simultaneously handle a call by two different base stations if a remote unit moves within a particular area (page 1 lines 13-33).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end

of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street

Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Brandt whose telephone number is (571) 270-1098. The examiner can normally be reached on 7:30a.m. to 5p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on (571) 272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Christopher M. Brandt

C.M.B./cmb

March 28, 2009

/George Eng/

Supervisory Patent Examiner, Art Unit 2617